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Design of a Portable Wind Generator

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Design of a
PORTABLE WIND GENERATOR

A Report to
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Head of Manufacturing Technology
Purdue University
Fort Wayne, Indiana

by
Daniel J. Banut
Manufacturing Technology
December 9, 1974

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ABSTRACT

This research on the design of a Wind Generator indicated that there are three main areas of design to be considered. The first area, and most important, is blade design. Since the power in the wind is low, the blade must trap this power and convert it to mechanical power called torque. The second area is the power drive design. It's purpose is to convert torque at a low rpm and step-up the rpm to a useful speed. The third area is the electrical design, this will convert mechanical power to useable electrical power.

The Wind Generator was first designed with a V-belt drive, then redesigned with a chain drive. Both methods will work if enough torque is produced by the blade, that was the main problem in the designs. The Wind Generator can effectively be used to generate current to charge a storage battery, but alterations in blade design is warranted.